

Abstract

A method of reading data comprises receiving a request for a stripe of erasure coded data, sending read messages to at least a quorum of storage devices, and  
5 receiving at least the quorum of reply messages from the devices. The quorum of the reply messages includes at least a minimum number of stripe blocks needed to decode the data. The quorum meets a quorum condition of a number such that any two selections of the number of the stripe blocks intersect in the minimum number of the stripe blocks. A method of writing data comprises generating a timestamp, encoding  
10 the data, sending query messages including the timestamp to the storage devices, receiving query reply messages from each of at least the quorum of the devices, sending write messages to the devices, and receiving a write reply message from each of at least the quorum of the devices.